CHANGES TO AMENDED CLAIMS

The changes to the claims amended herein are as follows:

1. (Once Amended) A data transfer apparatus that comprises:

a plurality of busses each configured to couple a processing device to a corresponding memory module;

at least one cross-bus coupled to each of the plurality of busses by one or more bus bridges, wherein the bus bridges each include a set of multiplexers that are configurable to steer signals from the bus to the cross-bus, and are further configurable to steer signals from the cross-bus to the bus; and

a memory management unit configured to receive memory access requests from a plurality of processing devices and to responsively configure the bus bridges to steer address and data signals accordingly,

wherein the plurality of busses includes two unidirectional bit lines for each data bit and the at least one cross-bus includes two unidirectional bit lines for each data bit, and wherein the bus bridges include a multiplexer for each outgoing bit line that selects from three other incoming bit lines.

11. (Once Amended) A method for transferring data between a set of memory modules and a set of processor units, wherein the method comprises:

said processing units providing transfer requests to a memory manager;

said memory manager setting a router in a conflict-free access pattern in response to said transfer requests, wherein setting said router includes:

said memory manager providing control signals to bus bridges that couple local busses between a memory module and a processing device to a cross-bus between the local busses,

wherein the local busses each include two unidirectional bit lines for each data bit and the cross-bus includes two unidirectional bit lines for each data bit,

wherein the bus bridges each include a multiplexer for each outgoing bit line that selects from multiple incoming bit lines; and

said processing units accessing memory modules via said router.

15. (Once Amended) A high-bandwidth bus which comprises:

a plurality of local [bus means]busses each for transferring data between a processing device and an associated memory module;

a cross-bus [means] for transferring data among the plurality of local [bus means]busses, wherein said cross-bus [means] is coupled to each of the plurality of local [bus means]busses by a bridge means; and

a memory controller means for setting said bridge means to provide processing devices with access to memory modules, wherein the memory controller means is configured to provide highest priority for accesses from processing devices to the associated memory modules

wherein the local busses each include two unidirectional bit lines for each data bit and the cross-bus includes two unidirectional bit lines for each data bit.

REMARKS

Based on the above amendments and the following remarks, applicants respectfully submit that all the pending claims are in condition for allowance.

Status of the Claims

Claims 1-15 were pending. Claim 9 has been canceled. Claims 1, 11 and 15 have been amended. Claims 1-8 and 10-15 are currently pending.

The amendment to claim 1 incorporates the limitations of canceled claim 9. The scope of this claim is unchanged relative to previously pending claim 9.

The amendment to claim 11 is made to incorporate limitations similar to those in canceled claim 9.

The amendment to claim 15 is made to restate certain "means-for" elements in more traditional form, explicitly reciting some limitations similar to those of canceled claim 9.

Rejections under 35 USC § 102(e)

"To anticipate a claim, the reference must teach every element of the claim." MPEP 2131. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236 (Fed. Cir. 1989). The elements must be arranged as required by the claim. In re Bond, 910 F.2d 831 (Fed. Cir. 1990).

The examiner rejected claims 1-8 and 10-15 under 35 USC § 102(e) as being anticipated by U.S. Pat. No. 6,148,356 ("Archer"). Applicants have amended independent claims 1, 11 and 15 to incorporate limitations of claim 9, which the examiner indicated as having allowable subject matter. Applicants submit that these claims and their dependent claims are allowable for at least this reason.

Conclusion

Applicants respectfully request reconsideration and allowance of the pending claims. If the examiner feels that a telephone conference would expedite the resolution of this case, he is

respectfully requested to contact the undersigned. In the course of the foregoing discussions, applicants may have at times referred to claim limitations in shorthand fashion, or may have focused on a particular claim element. This discussion should not be interpreted to mean that the other limitations can be ignored or dismissed. The claims must be viewed as a whole, and each limitation of the claims must be considered when determining the patentability of the claims. Moreover, it should be understood that there may be other distinctions between the claims and the prior art which have yet to be raised, but which may be raised in the future. If any fees are inadvertently omitted or if any additional fees are required or have been overpaid, please appropriately charge or credit those fees to Conley Rose, P.C. Deposit Account Number 03-2769/5201-20400/HDJK.

Respectfully submitted,

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